

USSR

UDC 576.858.25.095.38:576.895.42(98)

BEKLESHOVA, A. Yu., TERSKIKH, I. I., and SMIRNOV, V. A., Institute of Virology
imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR

"Arboviruses Isolated from Ceratixodes putus Pick.-Cambr Avian Ticks Collected in
the Far North"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 70, pp 436-440

Abstract: The Ixodes tick Ceratixodes putus Pick.-Cambr, a widely distributed ectoparasite of aquatic birds, is found in two regions of the USSR, the Far East (Kurile, Commander, and Sakhalin Islands) and the Northwest (islands and coasts of the Barents and White Seas). The virus was isolated from various developmental phases of the tick (egg, larva, nymph, male, and female) immediately after collection from birds and their nests and after refrigeration at 0 to 4°C for 2-1/2 years. Of the four strains studied in detail, two were identified as tickborne encephalitis virus, while the other two were found to be antigenically related to the WEE and EEE viruses. All of the strains were pathogenic for mice, especially when administered intracerebrally. The disease was readily transmitted to chicks which were fed naturally infected ticks. Chicks inoculated with virus isolated from ticks developed a generalized infection with involvement of the viscera, in which the virus was detected.

1/1

Refractory Materials

USSR

POPIL'SKIY, R. Ya., and SMIRNOV, V. A., Moscow Institute of Chemical Technology
imeni D. I. Mendeleev

"High-Temperature Scandium Oxide Ceramic"

Moscow, Ogneupory, No 12, Dec 70, pp 31-35

Abstract: A description is given of a procedure for obtaining a high-temperature ceramic from OS-99 (TU 4854-57) brand Sc_2O_3 . The easily flaking white powder has a bulk density of 0.75 g/cm^3 with less than 0.3% impurities. The density of samples calcined at 1900°C substantially increases with pressures up to 4000 kg/cm^2 ; the density of samples calcined at 2100°C increases up to 2000 kg/cm^2 . The relative density of samples made with a 1% bond of a 5% solution of polyvinyl alcohol, pressed with a pressure of 4000 kg/cm^2 and calcined in a vacuum at 2100°C with 2 hours holding time was 0.96-97 with zero open porosity. It is assumed that with improved grinding technology, pressure and temperature can be reduced. The results of investigations of the mechanical, thermal, electrical, and chemical properties are presented and discussed. Scandium oxide ceramics show great promise as construction and electric insulating materials. Under certain operating conditions,

1/2

USSR

POPIL'SKIY, R. Ya., and SMIRNOV, V. A., *Ogneupory*, No 12, Dec 70, pp 31-35
these ceramics may have substantial advantages over such highly refractory
oxides as MgO , ZrO_2 , Al_2O_3 and BeO .

2/2

58

USSR

UDC 669.71.48

POVKH, I. I., CHEKIN, D.V., SMIRNOV, V. A., BAZILEVSKIY, V. M., OKUNEV, V. M.,
POPOV, V. A.

"Study of the Possibility of the Impoverishment of Fused Salt Slags From Aluminum Production by Electromagnetic Weighting"

Tr. Donetsk. NII Chern. Metallurgii [Works of Donetsk Scientific Research Institute for Ferrous Metallurgy], 1970, No. 20(4), pp. 21-25. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G177 by the authors).

Translation: Studies performed on the electromagnetic weighting of salt slags produced in melting Al showed that it can be used to extract up to 98% of the Al and 83% of the oxides. 3 figs; 2 tables.

1/1

USSR

UDC: 621.376.54

SMIRNOV, V. A.

"A Pulse-Duration Modulator"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 12, Apr 71, Author's Certificate No 299962, Division H, filed 7 Jan 70, published 26 Mar 71, p 211

Translation: This Author's Certificate introduces a pulse-duration modulator which contains a moving pulse generator, a fixed pulse generator, a sawtooth voltage generator and a source of fixed bias. As a distinguishing feature of the patent, control limits are extended and the reliability of the modulator is improved by basing the sawtooth voltage oscillator on a thyristor with a capacitor connected between its anode and cathode. The control electrode of the thyristor is connected to the output of the fixed pulse generator, and the common tie-point of the thyristor cathode, capacitor and cathode resistor is connected to the input of the moving pulse generator.

1/1

- 167 -

USSR

UDC 535.825:533.07

GLAZANOVA, I. D., ZARUBINA, I. L., KULAKOV, A. A., and SMIRNOV, V. A.

"Microspectrofluorometer"

Leningrad, Optiko-mekhanicheskaya promyshlennost' No 11, Nov 71, pp 30-34

Abstract: A microspectrofluorometer MLI-1 (Author Certificate No 1145322) intended for full microphotometric investigations and developed at the Leningrad Optico-Mechanical Department is described. It permits the observation and photography of microstructures, the evaluation of radiation intensity variation of separate selected structure elements, and the recording of their luminescence spectra, as well as their excitation and absorption spectra. A so-called "probe" lighting is used in the apparatus at which, with the aid of microobjectives, the images of diaphragm probes are projected in the plane of studied and reference specimens on the selected microstructure element. A functional diagram as well as the optical diagram of the MLI-1 apparatus are presented and described in detail. The apparatus spectral operational range with luminescence excitation is between 240-450 nm, in luminescence study 300-700 nm and in absorption measurements 250-700 nm. The introduction of a scanning microscope stage with displacement limits 1/2

USSR

GLAZANOVA, I. D., et al., Optiko-mekhanicheskaya promyshlennost' No 11,
Nov 71, pp 30-34

from 10 to 300 microns, makes it possible to register the variation of
luminescence intensity or optical density of specimens along any selected
direction in the object plane, in scanning with probes 1 to 20 microns in
diameter.

2/2

- 132 -

USSR

UDC:669.714

POVKH, I. L., CHEKIN, B. V., SMIRNOV, V. A., BAZILEVSKIY, V. M., OKUNEV, V. M. and POPOV, V. A., Donets State University, Donets Scientific Research Institute for Ferrous Metals, State Scientific Research and Planning Institute of Alloys and Nonferrous Metal Processing

"Extraction of Aluminum and Oxides From Salt Slags Using Electromagnetic Forces"

Ordzhonikidze, Izvestiya Vysshikh Uchevnykh Zavedeniy, Tsvetnaya Metallurgiya, No 1, 1971, pp 65-68

Abstract: The possibility in principle of the process of extraction of aluminum buttons and oxides from melted salt slags using electromagnetic forces is demonstrated. The basis of the phenomenon is the fact that when a weakly conducting liquid in which conducting droplets and non-conducting particles are suspended is placed in crossed electrical and magnetic fields, the specific gravity of the conducting phases increases.

1/2

- 7 -

USSR

POVKH, I. L., et al., Izvestiya Vysshikh Uchevnykh Zavedeniy,
Tsvetnaya Metallurgiya, No 1, 1971, pp 65-68

This causes the droplets to precipitate to the bottom and the non-conducting particles to rise to the top.

2/2

1/2 008 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--FURFURYL ALCOHOLS FROM THE CORRESPONDING ALDEHYDES -U-

AUTHOR-(04)-SMIRNOV, V.A., KULNEVICH, V.G., SOLTQVETS, G.N., SEMCHENKO,
D.P.

COUNTRY OF INFO--USSR

SOURCE--GER. OFFEN. 1,803,373

DATE PUBLISHED--14MAY70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, FURFURYL ALCOHOL, ALDEHYDE, ORGANIC
SYNTHESIS, PENTOSE, HEXOSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1997/1422

STEP NO--GY/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0120210

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AA0120210

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. FURFURYL ALCS. (I, R EQUALS H, CH SUB2 OH, ME, PR, OR CL) WERE PREPD. IN 90-98PERCENT YIELD BY TREATING THE CORRESPONDING ALDEHYDES (II) WITH NA AMALGAM AND PASSING CO SUB2. AQ. SOLNS., AQ. ALC. SOLNS., OR SOLNS. OBTAINED FROM THE HYDROLYSIS OF PENTOSANS OR DEHYDRATED HEXOSE WERE USED AS SOLNS. OF II. THUS, A 3.34PERCENT AQ. SOLN. OF 6.98 G I (R EQUALS CHO) WAS ADDED TO 0.3 L. 2.36N NA AMALGAM AT A RATE OF 16 ML-MIN AT 18DEGREES AND CO SUB2 WAS BLOWN THROUGH AT 45 L.-HR TO GIVEN 6.3 G I (R EQUALS CH SUB2 OH). FACILITY: ORDZHONIKIDZE, S., POLYTECHNIC INSTITUTE NOVOCHERKASSK AND KRASNODAR POLYTECHNIC INSTITUTE.

UNCLASSIFIED

172 033 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--BLOOD SERUM SEROTONINE CONTENT AND ITS METABOLISM IN THE ACUTE
STAGE OF CEREBRAL CIRCULATORY DISORDERS -U-
AUTHOR--(02)-SMIRNOV, V.A., TEBLOVEV, I.K.
COUNTRY OF INFO--USSR
SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 59-61
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BLOOD SERUM, SEROTONIN, METABOLISM, BRAIN, CIRCULATORY SYSTEM
DISEASE, URINE, ATHEROSCLEROSIS, HYPERTENSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1694 STEP NO--UR/0475/70/000/004/0059/0061
CIRC ACCESSION NO--AP0129064
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 033

CIRC ACCESSION NO--AP0129064

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MAJORITY OF PATIENTS WITH DIFFERENT TYPES OF CEREBRAL CIRCULATORY DISORDERS SHOWED AN INCREASE OF BLOOD SEROTONINE. MORE SEVERE DEGREES OF CEREBRAL CIRCULATORY DISORDERS WERE ACCOMPANIED BY MORE MARKED QUATITATIVE CHANGES OF THE BLOOD SERUM SEROTONINE CONTENT. ALMOST 50PERCENT OF PATIENTS WITH CEREBRAL CIRCULATORY DISORDERS SHOWED CHANGES OF URINARY 5-OXYINDOLEACETIC ACID. SHARP CHANGES OF THE ABOVE INDICES IN PATIENTS WITH ATHEROSCLEROSIS AND HYPERTENSIVE DISEASE SHOULD BE CONSIDERED IN THE PLAN OF PROPHYLAXIS OF CEREBRAL CIRCULATORY CRISES. FACILITY: MOSKOVSKOGO MEDITSINSKOGO STGMATOLOGICHESKOGO INSTITUTA.

UNCLASSIFIED

Semiconductor Technology

USSR

UDC 621.315.592:669.777.054.2

S
MERKULOVA, N. A., KUKUSHKIN, N. A., SMIRNOV, V. A., KRAPUKHIN, V. V., and
ALEKSEYEVA, T. P.

"Investigation of the Temperature Field During Zone Recrystallization of Cadmium and Tellurium"

V sb. Teplo- i massoperenos v tverd. telakh, zhidkostyakh i gazakh (Heat and Mass Exchange in Solids, Liquids, and Gases--collection of works), Minsk, 1970, pp 237-244 (from RZh-Metallurgiya, No 8, Aug 70, Abstract No BG456)

Translation: Experimental data on heat exchange at the front of crystallization in the process of zonal refining of Cd and Te is processed according to the criteria of similarity of convective heat exchange, taking into consideration Stefan's condition at the boundary of phase separation. Analysis of the criterial equation shows that the coefficient of heat-exchange decreases with an increase in the relative length of the molten zone. Spontaneous fluctuations of temperature were observed during registration of the temperature along the entire length of the molten zone of the ingot. The largest fluctuations were observed in the middle of the molten zone, where minimum amplitude for Cd was 1.2° at a frequency of 6-8 periods per minute. At the same time no fluctuations were observed in

1/2

USSR

MERKULOVA, N. A., et al, Teplo- i massoperenos v tverd. telakh, zhidkostyakh i gazakh, Minsk, 1970, pp 237-244

narrow zones $2.5 \cdot 10^{-2}$ m. The fluctuations appeared in the narrower zones. On this basis, it is assumed that the source of fluctuations is the turbulent nature of the convective motion. N. DEMENKOV

2/2

1/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ZIRCONIUM AND HAFNIUM P,AMINOBENZOATES -U-
AUTHOR-(03)-SMIRNOV, V.A., PROZOROVSKAYA, Z.N., KOMISSAROVA, L.N.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1266-70
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ZIRCONIUM COMPOUND, HAFNIUM COMPOUND, AMINE, BENZOIC ACID,
CHEMICAL SYNTHESIS, THERMAL STABILITY, THERMAL ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/0716 STEP NO--UR/0078/70/015/005/1266/1270
CIRC ACCESSION NO--AP0136155
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136155

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ZRL SUB4 AND HFL SUB4, WHERE HL
EQUALS P, AMINOBENZOIC ACID, WERE SYNTHESIZED AND THEIR THERMAL STABILITY
WAS DETD. BY DTA AND THERMOGRAVIMETRY. A SCHEME IS PROPOSED FOR THEIR
DECOMPN. AND KINETIC PARAMETERS OF THE INITIAL STEP OF THE DECOMPN. ARE
GIVEN. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EXTINCTION COEFFICIENTS FOR AROMATIC CATIONS IN ETHANOL -U-
AUTHOR--(03)-SMIRNOV, V.A., ALFIMOV, M.V., ANDREYEV, O.M.
COUNTRY OF INFO--USSR
SOURCE--KHIM. VYS. ENERG. 1970, 4(3), 285-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--UV LIGHT, CATION, PHOTOEFFECT, PHENYLENE, DIAMINE, ANILINE,
ABSORPTION SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605012/E04 STEP NO--UR/0456/70/004/003/0255/0286
CIRC ACCESSION NO--AP0140308
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140308

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ABSORPTIVITIES (EXTINCTION COEFFS.) OF CATION RADICALS DERIVED FROM P-PHENYLENEDIAMINE, TETRAMETHYL-P-PHENYLENEDIAMINE, BENZIDINE, 4-HYDROXY-4-PRIME,AMINOBIIPHENYL, 4,4-PRIME,DIHYDROXYBIIPHENYL, AND 2-HYDROXYFLUORENE ARE TABULATED WITH BAND FREQUENCIES. THE SPECTRA OF CATION RADICALS WERE RUN AT 77 DEGREES K IN ETOH. THEY WERE OBTAINED BY IRRADIATION OF THE SAMPLE WITH UV LIGHT (250-340 M MU), OR WITH VISIBLE LIGHT (400 M MU). THE CONCN. OF THE CATION RADICALS WAS CALCULATED FROM THE DECREASE OF ABSORPTION CORRESPONDING TO THE PARENT COMPOUND. CATION RADICALS ARE THE ONLY PRODUCT AFTER TREATMENT WITH VISIBLE LIGHT; STABILIZED ELECTRONS ARE FORMED SIMULTANEOUSLY AFTER UV LIGHT TREATMENT. CATION RADICALS DERIVED FROM PHENOLS ARE CHARACTERIZED BY BANDS AT LOWER FREQUENCIES, WITH INTENSITIES LOWER THAN THOSE OF THE CORRESPONDING AMINES. LONGER IRRADIATION CAUSES DISAPPEARANCE OF BANDS ASSIGNED TO CATION RADICALS OF SOME AMINES (PHNH SUB2, PH SUB2 NH, 4,AMINOBIIPHENYL). FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr:

470055938

Abstracting Service:

CHEMICAL ABST 6-70

Ref. Code:

470038

117288c Zirconium and hafnium nitrobenzoates. Smirnov, V. A.; Prozorovskaya, Z. N.; Komissarova, L. M. (Mosk. Gos. Univ., Moscow, USSR). Zh. Neorg. Khim. 1970, 15(2), 311-6 (Russ). Acetylacetonate complexes of Zr or Hf react with *p*- or *o*-nitrobenzoic acid to give $M(p\text{-C}_6\text{H}_4\text{O}_2\text{N})_2$ (I) ($M = \text{Zr or Hf}$) or $\text{Zr}_2\text{O}(o\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$ and $\text{Hf}(o\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$, resp. The compds. were studied by DTA and thermogravimetry. $\text{Zr}(p\text{-C}_6\text{H}_4\text{O}_2\text{N})_2$ and $\text{Zr}_2\text{O}(o\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$ decomp. thermally to Zr_2O_3 , $\text{C}_6\text{H}_5\text{NO}_2$, Zr_2O_3 , $\text{C}_6\text{H}_5\text{NO}_2$, and ZrO_2 , and $\text{Zr}(p\text{-C}_6\text{H}_4\text{O}_2\text{N})_2$ forms ZrO_2 , $\text{C}_6\text{H}_5\text{NO}_2$, in addn. to the mentioned compds. Analogously $\text{Hf}(p\text{-C}_6\text{H}_4\text{O}_2\text{N})_2$ and $\text{Hf}(o\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$ decomp. to Hf_2O_3 , $\text{C}_6\text{H}_5\text{NO}_2$, Hf_2O_3 , $\text{C}_6\text{H}_5\text{NO}_2$, and HfO_2 , and $\text{Hf}(p\text{-C}_6\text{H}_4\text{O}_2\text{N})_2$ forms Hf_2O_3 , $\text{C}_6\text{H}_5\text{NO}_2$, in addn. to the mentioned compds. Activation energies of thermal decomp. of I were $\sim 20\text{-}41$ kcal/mole and of $\text{M}_2\text{O}(o\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$ were 41 and 46 kcal/mole for $M = \text{Zr and Hf}$, resp.

HMJR

pc

REEL/FRADE

19841267

USSR

UDC 621.032

SMIRNOV, N. B., Leningrad Institute of Aviation Instrument Building

"A Flip-Flop"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 8, Mar 71, Author's Certificate No 296242, division H, filed 12 Jan 70, published 12 Feb 71, p 186

Translation: This Author's Certificate introduces a flip-flop with a counting input based on a transistor-transfluxor element. As a distinguishing feature of the patent, the operational reliability of the flip-flop is improved by connecting the memory circuit resistor to the input circuit through a figure-eight winding which encircles the bridge of the small aperture of the transfluxor, while the base winding passes through the large aperture of the transfluxor.

1/1

- 58 -

USSR

UDC 551.501.8(124):551.510.52

SHUMILOV, I. A., KOSTERIN, I. N., and SMIRNOV, V. B.

"Side Propagation for Radio Waves Over Subauroral Ranges from Data of Tilted Probing of the Ionosphere"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. I (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972 pp 456-460 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A345)

Translation: The basic characteristics of signal propagation characterized by the deviation of the direction of propagation from the great circle arc (side signals) observed in ionograms of tilted probing of the ionosphere in the Murmansk-Leningrad path, are described. Bibliography of four. A. L.

1/1

USSR

UDC 551.501.8(124):551.510.52
VYSTAVNOY, V. M., KONTERIN, I. N., and SMIRNOV, V. B.

"Some Problems in the Use of Data for Tilted Probing of the Ionosphere in Selecting the Range of Operating Frequencies Over Subauroral Paths"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972 pp 448-451 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A343)

Translation: Some problems in the use of the data for tilted probing at a sliding frequency for choosing the optimal working frequencies in the subauroral Murmansk-Leningrad path are examined. The results of the tilted probing were used for prognosis of the radio communication under various conditions. Bibliography of four. A. L.

1/1

1/2 022

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--ELECTRIC STIMULATION OF THE DUODENUM IN THE DIAGNOSIS AND TREATMENT
OF CHRONIC PANCREATITIS -U-
AUTHOR--(03)-SOKOLOV, V.I., SMIRNOV, V.F., ORESHENKOV, H.M.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 2, PP 104-111

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIAGNOSTIC METHODS, ELECTROPHYSIOLOGY, DUODENUM, PANCREAS,
BILE, SECRETION, ENZYME ACTIVITY, GALL BLADDER, COLON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1983/1312

STEP NO--UR/0531/70/000/002/0104/0111

CIRC ACCESSION NO--AP0054196

UNCLASSIFIED

2/2

022

CIRC ACCESSION NO--AP0054196
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT. A REDUCED MOTORICITY OF THE DUODENUM IS ONE OF THE MAIN CHAINS IN THE PATHOGENESIS OF CHRONIC PANCREATITIS. IN CONDITIONS OF HYPOKINESIS OF THE INTESTINAL WALL THERE OCCUR PREREQUISITES FOR STASIS OF BILE AND PANCREATIC JUICE ABOVE THE ODDI'S SPHINCTER. ON THE OTHER HAND, DUODENAL HYPOTENSION CAUSES SECONDARY DILATATION OF THE SPHINCTER OF ODDI, THIS LEADING TO CONSTANT INFECTION OF THE DUCTS WITH ENZYME ACTIVE INTESTINAL CONTENTS. THUS, CHRONIC RECURRENT PANCREATITIS IS MAINTAINED. FOR THE TREATMENT OF HYPOKINETIC STATES OF THE DUODENUM IN 42 PATIENTS THE AUTHORS EMPLOYED ELECTRIC STIMULATION OF ITS MOTORICITY WITH A WEAK ELECTRIC DISCHARGE. ACTING UPON THE INTESTINAL PACEMAKER, SITUATED IN THE ZONE OF VATER'S PAPILLA, THE AUTHORS INTENSIFIED THE INTESTINAL MOTOR ACTIVITY IN PATIENTS WITH EARLY FUNCTIONAL STAGES OF CHRONIC PANCREATITIS, ATTAINING A POSITIVE CLINICAL EFFECT. THE TECHNIQUE OF ELECTRIC STIMULATION OF THE DUODENUM IS SIMPLE, SAFE, WELL TOLERATED BY PATIENTS AND MAY BE USED FOR NORMALIZATION OF THE MOTORICITY OF ALL INTESTINAL REGIONS. ELECTRIC STIMULATION IS DEEMED PERSPECTIVE IN THE TREATMENT OF POSTOPERATIVE PARESIS, FUNCTIONAL DUODENOSTASIS, DISKINESES, PANCREATOPATHIA, SOME FORMS OF NONCLACULOUS CHOLECYSTITIS, DUODENITIS AND PERSISTENT CHRONIC COLITIS.

UNCLASSIFIED

USSR

UDC 533.92:621.039.61

(12)
ALEKSIN, V. F., BIRYUKOV, O. V., VISHNEVETSKIY, V. N., GEORGIYEVSKIY, A. V.,
GROT, Yu. I., DIKIY, A. G., ZISER, V. Ye., KITAYEVSKIY, L. KH., KONOTOP,
P. I., POGOZHEV, D. P., PELETMINSKAYA, V. G., SERGEYEV, Yu. F., SMIRNOV,
V. G., SUPRUNENKO, V. A., TOLOK, V. T., and TARAN, V. M.

"Development and Synthesis of the "Uragan" Stellarator and Investigation
of Magnetic Surfaces of High Shear"

Kiev, Fizika Plasmy i Problemy Upravlyayemogo Termoyadernogo Sinteza
(Plasma Physics and Problems in Controlled Thermonuclear Synthesis --
collection of works) "Naukova dumka," No 3, 1972, pp 73-112

Abstract: After an initial section devoted to a review of the literature
on the magnetic surfaces of toroidal stellarators and the principles of
stellarators in general, the authors analyze the "Uragan" specifically.
In particular, this paper is concerned with the problems involved in
choosing the parameters of the magnetic system for the racetrack stel-
larator to obtain magnetic surfaces with high shear. This last term is
defined as the extent of crossing of the magnetic lines of force. The
synthesis and adjustment of the magnetic system are also examined, and
1/2

USSR

12
ALEKSIN, V. F., et al., Fizika Plasmy i Problemy Upravlyayemogo
Termoyadernogo Sintez, "Naukova dumka," No 3, 1972, pp 73-112

the results are given of an investigation into the instrument's magnetic surfaces. Computations worked out on an electronic computer for the design of the magnetic system are described, and differences between the "Uragan" and the "Sirius" stellarators are indicated. A comparative table of the parameters for various types of stellarator is given; it shows that the "Uragan" is one of the more powerful thermonuclear machines, with a high shear value for its substantial 10 koersted magnetic field intensity. This article is liberally illustrated with photographs and line drawings and has a bibliography of 51 titles.

2/2

- 65 -

USSR

UDC: 621.315.582

CHERAN, A. G., NEGRESEUL, V. V., OUSH, P. T., GORCHAK, L. V.,
UNGURYANU, G. I., and SMIRNOV, V. G.

"Solar Elements Using $p\text{-GaAs}_{1-x}\text{P}_x\text{-n-GaAs}$ Heterojunctions"
Tashkent, Geliotekhnika, No 1, 1972, pp 30-33

Abstract: The results of investigations made for determining the volt-ampere, load, and spectral characteristics of heterojunctions made by liquid epitaxial growth of solid solutions of $\text{GaAs}_{1-x}\text{P}_x$ on a GaAs substrate. The purpose of the research was to estimate the possibilities of using the $p\text{-GaAs}_{1-x}\text{P}_x\text{-n-GaAs}$ system as photoconverters. For the substrate, n-type GaAs with a μ of 2500-3500 $\text{cm}^2/\text{V}\cdot\text{sec}$ and an electron concentration of $7 \cdot 10^{15}$ to $4 \cdot 10^{17}$ per cc was used. The crystals of the material were oriented in the (111) plane and were covered by a solution of gallium containing dissolved GaP; the doping impurity was zinc, in a pure hydrogen atmosphere. Crystal growth was made in a temperature range of 760-910° C. Curves are plotted for the volt-ampere characteristic, the load characteristic, and the spectral distribution of the vapor collection coefficient for the heterojunctions. The basic advantage of the materials is that, in the form of solar elements, they can be used for operation at temperatures above 200° C, with an increase in the utilization percentage of the solar spectral energy.

1/1

1/2 033
UNCLASSIFIED
TITLE—AUTOMATIC MAINTENANCE AND CONTROL OF DEPTH OF ANESTHESIA -U-
PROCESSING DATE--09OCT70
AUTHOR--(05)--ZHOROV, I.S., SMIRNOV, V.G., MIKHELSON, V.A., KOTOVA, G.P.,
NIKITINA, L.G.
COUNTRY OF INFO--USSR
SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 2, PP
57-61
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ANESTHESIA, MEDICAL APPARATUS, ELECTROENCEPHALOGRAPHY, SURGERY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/0637
STEP NO--UR/0481/70/000/002/0057/0061
CIRC ACCESSION NO--AP0108848
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0108848

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS DESCRIBE AN APPARATUS WHICH REGULATES AUTOMATICALLY THE AETHER DOSAGE ACCORDING TO ELECTROENCEPHALOGRAPHIC DATA. OVER 50 IMPORTANT OPERATIONS HAVE BEEN CARRIED OUT WITH THIS METHOD. THIS APPARATUS IS A PROTOTYPE OF THE APPARATUS FOR AUTOMATIC CONTROL OF ALL THE MODERN METHODS OF ANESTHESIA. THIS WILL REQUIRE FURTHER INVESTIGATION AND STUDY. FACILITY: KAFEDRA FAKUL'TETSKOY KHIRURGII 2-GO LECHEBNOGO FAKUL'TETA 1 MOSKOVSKOGO MEDITSINSKOGO INSTITUTA IM. I. M. SECHENOVA AND MNIIP MINISTERSTVA RADIOPRMYSHLENNOSTI SSSR.

UNCLASSIFIED

USSR

UDC: 621.316.933

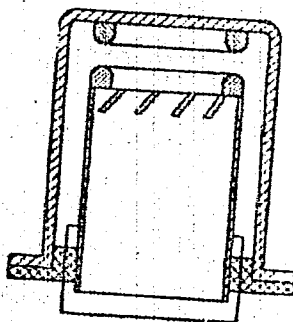
KOVALENKO, V. P., RODICHKIN, V. A., SMIRNOV, V. G., TIMONIN, A. M.
"A High-Current Spark Discharger"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 7, Mar 72, Author's Certificate No 329614, Division H, filed 30 Jun 70,
published 9 Feb 72, p 212

Translation: This Author's Certificate introduces a high-current spark dis-
charger which contains ring electrodes and a coaxial cylindrical channel for
feeding current to the electrodes. As a distinguishing feature of the patent,
the durability of the discharger is extended by cutting slots at an angle to
the generatrix through the coaxial current conducting cylinder at the line
of connection to the ring electrode.

USSR

KOVALENKO, V. P. et al., USSR Author's Certificate No 329614



2/2

- 95 -

UDC 533.92:621.039.61

USSR

ALEKSIIN, V. F., BIRYUKOV, O. V., VISHNEVETSKIY, V. N., GEORGIYEVSKIY, A. V., GROT, Yu. I., DIKIY, A. G., ZISER, V. Ye., KITAYEVSKIY, L. Kh., KONOTOP, P. I., POGOSHEV, D. P., PELETNINSKAYA, V. G., SERGEYEV, Yu. F., SMIRNOV, V. G., SUPRUNENKO, V. A., TOLOK, V. T., TARAN, V. M.

"Development and Production of the Magnetic System of the 'Uragan' Stellarator and a Study of Magnetic Surfaces With Large Shear"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhd. sb.
(Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No. 3, pp 73-112 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G279)

Translation: This paper concerns the study of the magnetic system of the three-loop "Uragan" stellarator-racetrack. Considerations concerning the selection of optimal parameters of the magnetic system of the stellarator are discussed. The equipment of the "Uragan" is briefly described. An experimental study of the magnetic surfaces made with the aid of low-energy electron beams showed that in the "Uragan" stellarator-racetrack with

1/2

USSR

ALEKSIN, V. F., et al, Fiz. plazmy i probl. upravl. termoyader. sinteza.
Resp. mezhved. sb., 1972, No. 3, pp 73-112

individually controlled cylinders there are closed magnetic surfaces with high shear values (~ 0.09) and angle of rotational conversion ($\sim 240^\circ$). The experimental data are compared with calculated values obtained on the BESM-6 computer.

2/2

- 53 -

USSR

UDC: 621.373:535(206.1)

BYKOVSKIY, Yu. A., VELICHANSKIY, V. L., MASLOV, V. A., and SMIRNOV, V. L.

"A Method for Increasing the Coherence of Pulsed, Semiconductor Laser Radiation"

Leningrad, Optika i Spektroskopiya, vol 32, No 3, 1972, pp 621-623

Abstract: This brief communication investigates the possibility of compensating the increase in wavelength of a pulsed laser due to heating of the active region through the pressure created by a barium zirconate piezoceramic element. For short pulses, the temperature increase and the laser wavelength increase are proportional to the square root of the time. But with application of pressure to the injection laser, the radiation spectrum shifts toward the short wavelengths. Consequently, the applied pressure can compensate the temperature change of the laser radiation wavelength during a pulse of the injection current, thus resulting in an improved time coherence of the laser. The design of a diode containing the piezoceramic element is shown. Experiments performed by the authors are described. They acknowledge their gratitude to Yu. P. Zakharov for the specimens and to V. V. Nikitin for his useful comments.

1/1

USSR

UDC 535.231.4.07:535.89

BAYUNOV, V. I., DEMIDOV, M. I., OGURTSOVA, N. N., Candidate of Technical Sciences, PODMOSHENSKIY, I. V., Candidate of Technical Sciences, SMIRNOV, V. L., SHEJEMINA, V. M.

"An Installation for the Measurement of High Brightness Temperatures"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 12, Dec 70, pp 24-27

Abstract: An installation for the measurement of brightness temperatures in the range of 6,000-100,000 ° K, with a time resolution of up to 3×10^{-8} seconds, is described. This is the IF-88 installation, designed and constructed by I. V. Bolotnikov and I. V. Peysakhson. Determination of the temperature is based upon successive comparison of the brightness of the source under investigation and that of Standard EV-45, the measurement being conducted simultaneously in two wavelength intervals, isolated by interference filters from a spectral range of 220-400 nanometers. 3 figures, 3 bibliographic entries.

1/1

- 97 -

USSR

UDC 629.78.002.3

SMIRNOV, V. M., PEREVYAZKO, A. T., FEDOROV, V. L.

"Effect of the Chemical Composition of Kh25N16G7AR Steel on Its High-Temperature Strength"

Metallovedeniye i term. obrabotka met. (Physical Metallurgy and Heat Treatment of Metals), 1972, No 8, pp 74-75 (from RZh-Raketostroyeniya, otdel'nyy vypusk, No 12, Dec 72, Abstract No 12.41.224)

Translation: Steel type Kh25N16G7AR (EI835L) is used to manufacture thin-walled welded-cast parts operating at temperatures to 850° C. The chemical composition of the Kh25N16G7AR steel is as follows: <0.12% C; 5-7% Mn; <1.0% Si; 23-26% Cr; 14-18% Ni; 0.25-0.45% N; <0.03% S; <0.035% P. The effect of each of the chemical elements of the Kh25N16G7AR steel on the temporary strength of the steel at 850° C was determined by correlation analysis of the data on dynamic production melts. The results obtained made it possible more precisely to define the limits of the chemical composition of Kh25N16G7AR steel and determine the range of optimal compositions with increased high-temperature strength. There are 2 illustrations, 1 table and a 7-entry bibliography.

1/1

1/2 035 UNCLASSIFIED PROCESSING DATE--27NOV76
TITLE--ON THE ROLE OF THE ADRENALS IN DEVELOPMENT OF THE ANAPHYLACTOID
REACTION IN RATS -U-
AUTHOR--SMIRNOV, V.M.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 3, 1970, PP
72-76
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--WHITE RAT, ADRENAL GLAND, METABOLISM, PHYSIOLOGIC ADAPTATION,
HORMONE, SURGERY
CONTROL MARKING--NC RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/0056 STEP NO--UR/0248/70/025/003/0072/0076
CIRC ACCESSION NO--AP0137245
UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137245

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. IN THIS ARTICLE WE SUBMIT DATA WHICH WE OBTAINED IN A STUDY OF THE ROLE OF THE ADRENALS IN DEVELOPMENT OF THE ANAPHYLACTOID REACTION IN ALBINO RATS, AS WELL AS DATA SHOWING THE INFLUENCE OF STRESS ON DEVELOPMENT OF THIS REACTION IN ADRENALECTOMIZED AND UNOPERATED ANIMALS. IT MUST BE NOTED THAT OUR DATA WITH RESPECT TO THE POSSIBILITY OF INCREASING THE RESISTANCE OF ADRENALECTOMIZED ANIMALS UNDER THE EFFECT OF AN ADDITIONAL NONSPECIFIC STIMULUS ARE NOT IN CONTRADICTION WITH THE OBSERVATIONS IN WHICH IT WAS FOUND THAT REMOVAL OF THE ADRENALS DIMINISHES THE ANIMALS' RESISTANCE. OBVIOUSLY, WHEN THESE GLANDS ARE REMOVED THERE IS MARKED IMPAIRMENT OF METABOLISM AND CONSIDERABLE DECREASE IN THE ABILITY OF OPERATED ANIMALS TO ADAPT TO DIFFERENT CONDITIONS. HOWEVER, THE RESULTS OF OUR EXPERIMENTS INDICATE THAT THE RESISTANCE OF THE ORGANISM CAN BE INCREASED NOT ONLY DUE TO PRODUCTION OF ADAPTED HORMONES BUT ALSO AS THE RESULT OF THE PRESENCE OF SOME OTHER MECHANISMS. THEREFORE FURTHER INVESTIGATION OF THE MECHANISM OF INCREASE IN NONSPECIFIC RESISTANCE OF THE ORGANISM UNDER THESE CONDITIONS IS REQUIRED. FACILITY:
SECOND MOSCOW MEDICAL INSTITUTE IMENI N. I. PIROGOV.

UNCLASSIFIED

USSR

UDC: 621.315.3

KOPYLOV, K. I., MENCHIKOV, L. P., OKUN', Ye. L., SMIRNOV, V. M., SHERSTO-BITOV, A. Ye.

"An Installation for Making Microwires in Glass Insulation"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 134-143 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V419)

Translation: The authors present the results of development of specialized installations for casting type ULP-5, ULP-6 and ULP-6M microwires in glass insulation. The schematic diagrams of the installations are described and their technical characteristics are given. Resumé.

1/1

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--NEUROPSYCHOLOGY AND ISSUES IN INVESTIGATION OF DEEP STRUCTURES OF
THE HUMAN BRAIN -U-
AUTHOR--SMIRNOV, V.M. **S**
COUNTRY OF INFO--USSR
SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 1, 1970,
PAGES 35-42
DATE PUBLISHED-----70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, BIOLOGICAL AND MEDICAL
SCIENCES
TOPIC TAGS--NEUROPHYSIOLOGY, PSYCHOLOGY, BRAIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/0972

STEP NO--UR/0248/70/025/001/0035/0042

CIRC ACCESSION NO--AP0130023

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0130023

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS KNOWN THAT RESEARCH PURSUED IN THE BORDERLINE ZONE OF DIFFERENT SCIENCES USUALLY LEADS TO DEVELOPMENT OF NEW AND RATHER PROMISING DIRECTIONS. THIS POSITION IS ALSO VALID FOR THE SCIENCES THE OBJECT OF RESEARCH OF WHICH IS THE THINKING HUMAN BRAIN. SEVERAL DECADES AGO, A NEW BRANCH OF MEDICAL PSYCHOLOGY, NEUROPSYCHOLOGY, WAS GENERATED ON THE BORDERLINE OF NEUROPHYSIOLOGY, NEUROANATOMY AND PSYCHOLOGY, AND IT BEGAN TO DEVELOP SUCCESSFULLY. AT PRESENT THIS SCIENCE HAS GAINED RECOGNITION NOT ONLY ABROAD BUT ALSO IN OUR COUNTRY WHERE MUCH WAS DONE TO DEVELOP IT BY L. S. VYGOTSKIY, A. R. LURIYA, V. N. MYASISHCHEV, N. P. BEKHTEREVA, M. S. LEBEDINSKIY, V. D. NEBYLITSIN, AND OTHERS. NEUROPSYCHOLOGY IS THE CONNECTING LINK BETWEEN PHYSIOLOGY OF THE BRAIN AND PSYCHOLOGY. THIS IS NOT ONLY THE MEDIATOR WHOSE SERVICES ARE READILY SOUGHT BY BOTH SIDES, BUT ALSO AN INDEPENDENT SCIENTIFIC DISCIPLINE. IT DEALS WITH THE COURSE OF MENTAL PROCESSES, DEVELOPMENT OF PSYCHIC STATES, FORMATION OF PSYCHOLOGICAL PROPERTIES OF THE PERSONALITY AND THEIR RELATION TO STRUCTURAL AND FUNCTIONAL ORGANIZATION OF THE BRAIN. AND NEUROPSYCHOLOGY DEALS WITH THE MECHANISMS OF THE ENTIRE BRAIN, INSEPARABLE FROM THEIR INTERNAL ELEMENTS INCLUDING BOTH COGNITION AND IDEATION, BOTH EXPERIENCE AND PERSONALITY ATTITUDE. FACILITY: INSTITUTE OF EXPERIMENTAL MEDICINE, USSR ACADEMY OF MEDICAL SCIENCES, LENINGRAD.

UNCLASSIFIED

USSR

UDC 669.141018.44

SMIRNOV, V. M., PEREVYAZKO, A. T., and FEDOROV, V. L.

"The Effect of the Chemical Composition of Kh25N16G7AR Steel on Its Heat Resistance"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 8, 1972, pp 74-75

Abstract: The effect of each chemical element (C, Mn, Si, S, P, Cr, Ni, N) of Kh25N16G7AR steel on its short-duration heat resistance at 850°C was investigated by means of a correlation analysis of melting data. The experimental results make it possible to define more exactly the limits of Kh25N16G7AR steel composition and to determine the region of the optimum compositions with increased heat resistance. Higher contents of chromium and silicon and lower concentrations of manganese, nickel, and phosphorus increase the heat resistance. Nitrogen, carbon, and sulfur, in the limits of the brand composition, have little effect on heat resistance. One figure, one table, seven bibliographic references.

1/1

- 35 -

USSR

UDC: 621.396.96:681.32

ALEKHIN, V. A., KAZARINOV, Yu. M., KRAMUSHCHENKO, V. I., NOVOSEL'TSEV,
L. Ya., SMIRNOV, V. N.

"On Designing Devices for Primary Processing of Radar Information"

Izv. Leningr. elektrotekhn. in-ta (News of Leningrad Electrical Engineering
Institute), 1972, vyp. 102, pp 18-25 (from RZh-Radiotekhnika, No 12, Dec 72,
abstract No 12G18 [résumé])

Translation: The paper deals with selecting an algorithm for primary processing of a scanning radar signal and modifications of arranging the memory of the [corresponding] device. It is shown that it is advisable to use weighted summation of quantized signals for short pulse trains, and balanced summation for long ones. It is suggested that the memory module be made in the form of parallel-operating "long" shift registers. In the case of a large number of accumulated pulses, it is recommended that the required memory volume be reduced by making the device in accordance with the principle of a multichannel queuing system. Three illustrations, bibliography of five titles.

1/1

- 92 -

USSR

UDC 621.315.592

OKSMAN, YA.A., SEMENOV, A.A., SMIRNOV, V.N., SMIRNOV, O.M.

"On The Multiphoton Absorption In Wide-Band Semiconductors"

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 731-733

Abstract: Specimens of GaAs, ZnSe, and ZnS were irradiated by intense luminous fluxes in the region of transparency. For excitation, ruby and neodymium lasers were used which furnished single pulses with an energy less than one Joule and a duration of 50 and 100 nanosec, respectively. The dependence is found: 1) Of nonequilibrium absorption and the concentration of carriers (GaAs only) on the intensity of laser emission; 2) Of the photodielectric signal (nonequilibrium complex conductivity) on the intensity of laser emission; and 3) Of the photodielectric signal (effectiveness of photoresponse) in single crystal ZnS on the energy of the photons of the illuminator $\hbar\omega$ at constant intensity of the laser emission. The results provide a reason for considering that in wide-band semiconductors with a wide spectrum of impurity states which are exposed to the effect of powerful light pulses with $\hbar\omega < E_g$, impurity one- and two-photon generation of carriers appears in the first place; in the latter case it evidently goes through real compound states. 3 fig. 8 ref. Received by editors, 27 Jan 1971; in final rewording, 13 July 1971.

1/1

- 188 -

USSR

UDC: 662.215.1

ZINCHENKO, A. D., SMIRNOV, V. N., CHVILEVA, A. A., Chelyabinsk

"Measurement of Electrical Conductivity of Explosion Products During Detonation of a Cast Charge of TG 40/60"

Novosibirsk, Fizika Goreniya i Vzryva, No 3, 1971, pp 422-426.

Abstract: The conductivity of a detonation plasma was measured by two methods: MHD and an electric contact method. The former method is used for the first time for the investigation of a dense plasma ($\rho = 2-3\text{g/cm}^3$). The results of measurement by the two methods agree. The mean specific conductivity of the plasma at 2.4 mm from the origin of the detonation wave was 9.3 mho/cm. The voltage characteristics produced by the MHD method contain a threshold voltage. The threshold voltage depends linearly on the intensity of the magnetic field applied. The mechanism of development of the threshold voltage cannot be determined from the available experimental results. It can only be assumed that the appearance of this effect results from peculiarities of the near-electrode layers in the presence of the magnetic field.

1/1

USSR

UDC 621.391.84:621.391.863.2

NOVOSEL'TSEV, L. YA., SMIRNOV, V. N.

"Amplitude Quantization of Signals in a Multichannel Detector"

Izv. Leningr. elektrotekhn. in-ta (News of the Leningrad Electrotechnical Institute), 1971, No 98, pp 14-17 (from RZh--Radiotekhnika, No 1, 1972, Abstract No 1A54)

Translation: By using the concept of the probability of servicing a quantized signal, a study was made of the possibility of optimal selection of the quantization threshold for the case where the sufficient attribute for the busy state of one of the independent channels of the detector is a single case where the input process exceeds the quantization threshold. It is demonstrated that the requirements of low failure probability and effective storage can be satisfied simultaneously if we compare the input process with respect to amplitude with two thresholds --- the lower and upper; this is equivalent to an increase in the number of channels by 1.5-2 times. There is 1 illustration and a 2-entry bibliography.

1/1

USSR

UDC 621.391.84:621.391.883.2

VASIL'YEV, YU. P., ~~SMIRNOV, V. N.~~

"Some Characteristics of Two-Step Binary-Quantized Signal Detection"

Izv. Leningr. elektrotekhn. in-ta (News of the Leningrad Electrotechnical Institute), 1971, No 98, pp 24-26 (from RZh--Radiotekhnika, No 1, 1972, Abstract No 1A55)

Translation: According to the investigated method, the detection of binary-quantized signals is realized in two steps: comparison of the sum of the signals stored in m soundings with the threshold l , and, in the case of satisfaction of the selected criterion, further storage of signals for $N - m$ soundings with subsequent comparison of the total number after N -soundings with the threshold k_0 . The probability of correct detection is defined. It is demonstrated that there is an optimum in the set of values of l , m , k_0 and the probability that the noise will exceed the quantization threshold. The bibliography has 1 entry.

1/1

- 21 -

USSR

UDC 321.374.34

KRAMUSHCHENKO, V. I., NOVOSEL'TSEV, L. Ya., SMIRNOV, V. N., Leningrad Order
of Lenin Electrotechnical Institute imeni V. I. Ul'yanov (Lenin)

"Binary Time-Amplitude Quantizer"

USSR Author's Certificate No 304683, filed 3 February 1970, published 24 May
1971 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 17, 1971, No H 03k 5/153)

Translation: A binary time-amplitude quantizer of signals from a pulse
radar containing a series connected threshold device, a comparison circuit and
two standard pulse shaping triggers is introduced. It is distinguished by the
fact that in order to exclude the formation of standard pulses in adjacent
intervals of the quantizer from one excess pulse, between the output of the
threshold device and one of the inputs of the comparison circuit an auxiliary
trigger is connected via an inverter. The auxiliary trigger is connected by
its second input to the output of the first standard pulse shaping trigger.

1/1

1/3 . 024
UNCLASSIFIED
PROCESSING DATE--16OCT70
TITLE--USE OF ISOENZYMES OF LACTATEDEHYDROGENASE SPECTRA IN THE SERUM IN
THE DIAGNOSIS OF DISEASES OF THE PANCREAS -U-
AUTHOR--(05)-CHAZOV, YE.I., SMIRNOV, V.N., TARSIS, G.B., LITVIN, G.D.,
KANSIN, N.N.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 4, PP 23-29
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--INTERNAL ORGAN DISEASE, PANCREAS, TUMOR, PACREATITIS, BLOOD
CHEMISTRY, LACTATE DEHYDROGENASE, DIAGNOSTIC MEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/0547
STEP NO--UR/0504/70/042/004/0023/0029
CIRC ACCESSION NO--AP0108763
UNCLASSIFIED

2/3 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0108763

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE PRESENTS THE RESULTS OF THE USE OF ISOENZYME SPECTRA OF LACTATEDEHYDROGENASE IIN THE BLOOD SERUM FOR DIAGNOSIS OF DISEASES OF THE PANCREAS: HEMORRHARGIC PANCREONECROSIS, CHOLISTOPANCREATITIS, CANCER OF THE PANCREAS. THE AUTHORS USED AN ORIGINAL METHOD OF DIVISION OF ISOENZYMES OF LDG OF THE SERUM IN POLYACRYLAMIDE BLOCKS. DATA CONCERNING THE DYNAMIC CHANGES IN THE ENZYME SPECTRA OF LDG OF THE SERUM FOR PATIENTS WITH THE MENTIONED DISEASES WERE COMPARED WITH THE RESULTS OF DIASTASIS DETERMINATION IN THE SERUM. IT WAS FOUND THAT IN CASE OF HEMORRHARGIC PANCREATITIS A POSITIVE CORRELATION BETWEEN THE GROWTH OF LDG-3 AND LDG-4 CONTENT OF THE SERUM IN POLYACRYLAMIDE BLOCKS. DATA CONCERNING THE DYNAMIC CHANGES IN THE ENZYME SPECTRA OF LDG OF THE SERUM FOR PATIENTS WITH THE MENTIONED DISEASES WERE COMPARED WITH THE RESULTS OF DIASTASIS DETERMINATION IN THE SERUM. IT WAS FOUND THAT IN CASE OF HEMORRHARGIC PANCREATITIS A POSITIVE CORRELATION BETWEEN THE GROWTH OF LDG-3 EXPECTED. AND LDG-4 CONTENT OF THE SERUM AND HIGH FIGURES OF THE BLOODVDIASTASIS. SIMILAR RECONSTRUCTION OF THE ISOENZYME SPECTRUM OF LDG OF THE SERUM WAS NOTED IN THE MAJORITY OF PATIENTS WITH EXACERBATION OF CULCIOUS CHOLECYSTITIS IN NORMAL FIGURES OF THE SERUM DIASTASIS. CONSERVATIVE TREATMENT OF PATIENTS WITH CHOLECYSTOPANCREATITIS AND CHOLYCYSTITIS MAY BRING ABOUT A CHANGE IN THE INITIAL PICTURE OF THE ISOENZYME SPECTRUM. IN CASE OF CANCER OF THE PANCREAS CHANGES IN THE ISOENZYME SPECTRUM OF THE SERUM LDG WERE NOT OBSERVED.

UNCLASSIFIED

3/3 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0108763

ABSTRACT/EXTRACT--IT WAS FOUND THAT DETERMINATION OF THE ISOENZYME SPECTRA OF THE SERUM LDG ALLOWS A DIFFERENTIAL DIAGNOSIS OF MYOCARDIAL INFARCTION AND AN ATTACK OF ACUTE PANCREATITIS TO BE MADE. THE AUTHORS ASSUME THAT THE CHANGES IN THE ISOENZYME SPECTRUM OF THE SERUM LDG OBSERVED IN PANCREATITIS AND CHOLECYSTOPANCREATITIS ARE PECULIAR NOT ONLY TO THE DISEASE OF THE PANCREAS. AT THE SAME TIME THE METHOD IS VERY USEFUL IN DIAGNOSIS OF THESE DISEASES AND CAN BE USED FOR THE ASSESSMENT OF THE EFFICACY OF THE THERAPY USED. FACILITY: TSENTRAL'NAYA N-I LABORATORIYA 4-GO GLAVNOGO UPRAVLENIYA PRI MINISTERSTVE ZDRAVOOKHRANENIYA SSSR, MOSCOW.

UNCLASSIFIED

USSR

S

UDC 621.394.542.3

PELEKHATYY, M. I., POTAPOV, N. A., SKLYAROV, S. I., SMIRNOV, V. N.,

"Problems in the Reception and Transmission of Pseudo-Random PM Signals"

Moscow, Elektrosvyaz', No 7, 1970, pp 32-38

Abstract: This article deals with the following two problems in phase-modulated information transmission: the possibility of reducing the ratio of the side levels of the correlation function to the central lobe through a transformation of the signal; finding a principle on which to construct a new class of pseudo-random sequences with good autocorrelation and inter-correlation characteristics when the signal transformation is introduced. To improve the ratio of the central lobe of the correlation function to the side lobe, a transformation in which two parts of the same signal are multiplied is used. The transformation is made by breaking a sequence up into two orthogonal components. The authors show how their methods can be applied to binary and quaternary sequences.

1/1

1/2 027 UNCLASSIFIED PROCESSING DATE--30JCT70
TITLE--INTERPRETATION OF X RAY EMISSION SPECTRA OF CRYSTALS IN THE
ULTRASOFT REGION -U-
AUTHOR-(02) ~~SMIRNOV, V.P.~~, ALESHIN, V.G.
COUNTRY OF INFO--USSR
SOURCE--VESTN. LENINGRAD. UNIV., FIZ., KHIM. 1970, (1), 47-9
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--X RAY SPECTRUM, EMISSION SPECTRUM, CONDUCTION ELECTRON,
ELECTRON ENERGY LEVEL, BORON NITRIDE, CRYSTAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0549 STEP NO--UR/0054/70/000/001/0047/0049
CIRC ACCESSION NU--AP0117779
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117779

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE D. OF STATES IN VALENCE ZONE OF CUBIC BN AS WELL AS THE INTENSITIES OF X RAY EMISSION SPECTRA OF B AND N ARE CALCD. AND COMPARED WITH EXPTL. DATA. THE SPECTRA IN THE ULTRASOFT REGION CAN BE USED FOR OBTAINING VALUABLE INFORMATION ABOUT BOTH ZONE STRUCTURE AND POSITIONS OF SINGULARITIES.

UNCLASSIFIED

Instruments and Measurements

USSR

UDC 621.317.1.029.64

SMIRNOV, V. P.

"Possibilities of Measuring the Width of the Radiation Band of Pulse Signals in the UHF Range"

Vestn. Kiev. politekhn. in-ta. Ser. radiotekhn. i elektroakust. (Kiev Polytechnical Institute Herald. Electronics and Electroacoustics Series) 1972, No 9, pp 71-73 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A483)

Translation: Energy methods of measuring the width of the radiation band (WRB) of UHF pulse signals are considered. A method is described for measuring WRB, based on a comparison of the signal power with radiation outside the band. Three illustrations, bibliography of two. Resume

1/1

SMIRNOV, V. P.

BASIC PROBLEMS IN THE DESIGNING OF APOBING PODS OF FAST
POWER REACTORS

Article by V. I. Matveev, N. M. Vorobeychikov, N. V. Korobov,
V. I. Shchegolev, Physics-Energy Institute, Obninsk; Dimitriyev,
Reaktorov) (Absorbing material and control regulating reactive material,
International Working Group for Fast Reactors Specialists Meeting,
Dmitriyev, 1-5 June, 1973)

In this work the basic principles of the selection
and development of regulation units for fast power
reactors are considered. The results of research
of the efficiency of various materials in
DFS assemblies are given. The operating conditions
of the regulation units are considered. Various
problems of the designing of absorbing rods are
discussed. The results of pre-reactor tests are
respect to investigations of the compatibility of
boron carbide, boron, and europium oxide with
steel OKhN15M3B are given.

1. Physical Principles of the Selection of Regulation Units for
Fast Power Reactors

Selection of the method of regulation of a reactor is
determined by various factors, the most important ones of which
are the provision of the necessary reserve of reactivity. The
fast region of energies is characterized by relatively small
magnitudes of neutron cross-sections, especially absorption cross-
sections, for practically all elements. Nevertheless, the most
effective method of regulating fast power reactors is the use
of regulation by absorbing material, although the selection of
such materials is very limited [1]. Calculation and experimental
investigations demonstrate that the most effective materials
which are of practical interest are materials based on boron-10,
europium, phenyl and cerium. The comparative efficiency of
various materials, measured on a model of the BN-350 reactor
assembly BPS-16 [2] is presented in Table 1.

USSR

UDC: 622.24.051.553

Turov, L. N., Bobrov, S. N., Lyukshin, P. M., Smirnov, V. P.

"Industrial Testing of Type V-97T Drill Bits with Noncase-hardened Steel Cutters"

Moscow, Bureniye, No 6, 1972, pp 3-4.

Abstract: The Moscow Institute of the Petrochemical and Gas Industry imeni I. M. Gubkin has developed drill bit cutters of noncase-hardened steel, referred to as type D7KhFNSh. V-97T drill bits have been made using these cutters. The cutters were hardened in oil (from 840-860°C) then low tempered (at 180-200°C). The bits have been subjected to test stand and field testing, and have shown test results some 30-40% higher than the series produced bits with cutters of type 17N3MASSh steel.

1/1

- 61 -

USSR

UDC 591.5:599.32.3

SMIRNOV, V. S.; PAVLENKO, T. A.; POKROVSKIY, A. V.; Institute of Plant and Animal Ecology, Ural Scientific Center, Academy of Sciences USSR, Institute of Ecology and Parasitology, Academy of Sciences, Uzbek SSR

"A Method for Analysis of Age Structure in the Small Five-Toed Jerboa *Allactaga Elater* (Licht.)"

Moscow, *Ekologiya*, No 4, 1971, pp 88-89

Abstract: A special method for age analysis, especially adapted to the small rodent *Allactaga elater* was developed, since existing techniques for analyzing bone and tooth structure or length of tooth roots were not suitable for this species. A modification of standard methods for determining age by the degree of wear on tooth crowns was chosen, and a method of graphic analysis (Smirnov, 1960) was used which did not require animal tagging and recapture for exact age samples.

Since considerable differences in degree and manner of M_1 , M_2 , M_3 wear (interior or exterior side) were observed in various
1/2

USSR

SMIRNOV, V. S., et al, Ekologiya, No 4, 1971, pp 88-89

animals, a mean "age index" was developed, representing a total of six different measurements: the total height for the crowns of all three molars on one of the mandibular bones, measured on both the inside and on the outside. Since in the aging process the animal's tooth crowns wear down, this index should decline in proportion to age.

Distribution groupings from population analyses taken on III/68, IX/68 and V/69 showed that this species in the region investigated (Ferganda valley) had two distinct reproductive periods, the spring and fall, and that the life span of *Alactaga elater* corresponds to the general span for small murine rodents.

2/2

- 26 -

USSR

UDC 59 + 517.11

~~SMIRNOV~~ V. S., Institute of Plant and Animal Ecology, Ural Affiliate of the Academy of Sciences USSR, Sverdlovsk

"The Nil-Hypothesis and Its Application in Zoological Studies"

Moscow, Zhurnal Obshchey Biologii, Vol 31, No 1, 1970, pp 62-71

Abstract: In applying the nil-hypothesis for the statistical treatment of ecological phenomena, one usually assumes that this hypothesis describes the general range of related phenomena (i. e., that a concrete phenomenon does not differ from those in the general range), while differences in the observed sampling of facts are regarded as an alternative hypothesis. With equal justification, one may regard as the nil-hypothesis quantitative characteristics of a phenomenon described repeatedly by previous investigators, and the characteristics or course of a phenomenon observed by the investigator in a single sampling as an alternative. When it has been established that a much higher probability (95 to 99.9 percent) is attached to the alternative hypothesis as compared with the nil-hypothesis, the alternative hypothesis replaces the latter and a scientific discovery may be claimed. As shown by a number of examples from the literature, incorrect interpretation of facts and faulty mathematical treatment often lead to results that conflict with common sense. To prevent errors in the statistical treatment of ecological phenomena, better mathematical training of investigators in this field is desirable.

1/1

- 59 -

Acc. Nr. **110049897** Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:
U R 00 20

104339v Coupling of reactions resulting from hydrogen transfer through the catalyst. Gryaznov, V. M.; Smirnov, Y. S.; Ivanova, L. K.; Mishchenko, A. P. (Univ. Druzhby Narodov, Moscow, USSR). Dokl. Akad. Nauk SSSR 1976, 190(1), 144-7 [Phys. Chem] (Russ). A dehydrogenation reaction was performed in a Pd tube (Pd-membrane catalyst) and the evolved H, transported through Pd to the outside, became involved in a hydrogenation reaction with unsatd, hydrocarbons. Dehydrogenation of butene to butadiene took place at 380° on a Pd-membrane catalyst at a rate 2000 times higher than with the reaction performed on the industrial K-16 catalyst at 600°. Simultaneously with the above dehydrogenation, the transported H was consumed by a hydrogenation of C₄H₆ and, as the result, the dehydrogenation did not give *trans*-2-butene as a byproduct.

HMJR

REEL/FRA
19801829

USSR

UDC 621.372.85

STOLYAROV, A. K., SMIRNOV, V. S., and NAUMOV, I. A.

"Microband Ferrite Units for Integrated Super-High Frequency Circuits"

Elektron. tekhnika. Nauch.-tekhn. sb. Ferrit. tekhn. (Electronics Technology. Scientific-Technical Collection of Articles. Ferrite Technology), 1971, vyp.4 (31), pp 60-64 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 B153)

Translation: The authors describe ferrite, super-high frequency, microband module-circulators, phase inverters, rectifiers, and amplifying circuits with circulators designed for use in integrated and hybrid integrated super-high frequency circuits. Resume.

1/1

- 19 -

USSR

UDC 669.725:621.77

SMIRNOV, V. S., YAKOVLEV, V. P., and ALEKSANDROV, A. A.

"Rolling of Beryllium in Vacuum"

Moscow, Tsvetnyye Metally, No 3, 1973, pp 56-57

Abstract: Commercially pure (1.2-1.4% BeO) beryllium samples heated to 550-950°C were rolled in vacuum ($2 \cdot 5 \cdot 10^{-5}$ mm Hg) on a reversing rolling mill with a rolling rate of 0.1-0.76 m/sec. First cracks appeared on samples when the reduction in area reaches 3-5% and a complete rupture was followed when the reduction in area was higher. Individual samples heated to 850°C sustained the reduction in area up to 30% without rupturing when rolled with 0.76 m/sec. However, the majority of samples were badly deformed when rolled with 0.76 m/sec. Cracks appeared on both the contact and side surfaces of samples during rolling. When a preliminary heating temperature was low, cracks appeared at first on side surfaces, but samples heated to 900°C developed cracks on contact surfaces with rolls. This was attributed to a very rapid cooling of the surface layer of metal contacted with cold rolls. In order to eliminate it, molybdenum lining 2 mm thick was used on both sides of the samples; the lining was heated together with the samples. Rolling of samples in molybdenum lining did not produce any cracks on the contact surfaces. Cracks and ruptures in this case

1/2

USSR

SMIRNOV, V. S., et al, Tsvetnyye Metally, No 3, 1973, pp 56-57

appeared on the side surfaces at any rolling temperature. The plasticity maximum of beryllium rolled in molybdenum lining was shifted toward lower temperatures compared with rolling without linings. The average metal pressure on rolls decreased from 28 to 10 kg/mm² when samples were heated from 650 to 950°C. The average deformation rate of beryllium during rolling amounted to 10 sec⁻¹. The friction coefficient of beryllium rolled in vacuum increased with temperature and reached 0.5 at 950°C.

2/2

USSR

UDC 621.771.001

VLADIMIROV, V. I., SADOVNIKOV, B. V., and SMIRNOV, V. S., Leningrad

"Investigation of Aluminum Failure in Cross Rolling by the Method of Density Measuring"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 1, Jan-Feb 72, pp 76-82

Abstract: The density change in cross rolling of specimens of aluminum (brand A99, All-Union State Standard 11069-64) was experimentally investigated. The results are discussed by reference to diagrams showing the density changes in cross rolling of specimens annealed at 500 and 600°C, annealed in air, and cross-rolled annealed in air. In deformations up to 2-2.2%, a density increase during rolling up to a maximum takes place. In deformations higher than 3.5-4%, a density decrease results. In a density decrease up to 10^{-3} g/cm³, a healing of defects takes place. In a density change of $\Delta \rho \approx (1-2) \cdot 10^{-3}$ g/cm³, healing can originate at the expense of plastic deformation by the action of internal residual stresses. With $\Delta \rho = (2.5-10) \cdot 10^{-3}$ g/cm³, stable pores develop in the center of the specimen. At $\Delta \rho > 10^{-2}$ g/cm³, the developed pore, after cessating of active deformation, grows under the action of residual stresses in direct proportion to the initial $\Delta \rho$ and can intergrow up to the outer surface of the specimen. In combination with any

1/2

USSR

VLADIMIROV, V. I., et al., Fizika i Khimiya Obrabotki Materialov, No 1,
Jan-Feb 72, pp 76-82

method for the determination of the number of defects, the cross rolling
method can be used successfully for the investigation of the process of metal
failure. Three illustrations, three formulas, 17 bibliographic references.

2/2

- 67 -

USSR

UDC 621.762.4.001:669

SMIRNOV, V. S., PAVLOV, N. N., and VINOGRADOV, S. Ye.

"Application of the Lagrange Variational Principle in Pressure Working of Metallic Powders"

Tr. Leningr. politekhn. in-ta [Works of Leningrad Polytechnical Institute], No. 315, 1970, pp. 10-15 (Translated from Referativnyy Zhurnal-Metallurgiya, No. 2, 1971, Abstract No. 2 G388 by the authors)

Translation: The possibility is studied of applying methods of the solution of problems of elasticity and plasticity for solid bodies to discrete bodies. A criterion is developed allowing the applicability of such methods to be evaluated. Formulas are produced for solution of the planar problem of pressing of powders by variational methods. 3 figures; 6 biblio. refs.

1/1

- 30 -

1/3 031

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--WORKS OF SOVIET SCIENTISTS IN THE DEVELOPMENT OF THE THEORY OF THE
PLASTIC WORKING OF METALS -U-

AUTHOR--SMIRNOV, V.S.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK USSR, METALLY, NO 2, MAR-APR 70,
PP 45-48

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--PLASTIC DEFORMATION, METAL ROLLING, ROLLING MILL, HIGH
STRENGTH STEEL, STEEL PIPE, METAL WORKING, METALLURGIC R AND D

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1997/0931

STEP NO--UR/0370/70/000/002/0045/0048

CIRC ACCESSION NO--AP0119814

UNCLASSIFIED

2/3. 031

CIRC ACCESSION NO--AP0119814

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THEORY OF THE PLASTIC WORKING OF METALS HAS ITS BEGINNINGS IN THE PREREVOLUTIONARY YEARS IN RUSSIA. N. S. VERESHCHAGIN, I. A. TIME, AND V. YE. GRUM-GRZHMAYLO WERE PROMINENT FIGURES. ALTHOUGH SIGNIFICANT WORK IN THE DEVELOPMENT OF THE THEORY WAS DONE BY FOREIGN SCIENTISTS (T. KARMAN, A. NADAI, Z. ZISEL', AND OTHERS), THE GREATEST CREDIT FOR THE DEVELOPMENT OF THE CONTEMPORARY THEORY SHOULD BE GIVEN TO SOVIET SCIENTISTS. A 1946 BOOK "ROLLING MILLS" BY A. I. TSELIKOV, MARKED THE COMPLETION OF AN ESSENTIAL STAGE IN THE DEVELOPMENT OF LONGITUDINAL ROLLING THEORY. IN THE MID 1950'S, CALCULATION METHODS WERE DEVELOPED WHICH COULD BE APPLIED TO PLANAR AND AXISYMMETRIC FLOW. PRESENTLY, ENERGY AND VARIATIONAL METHODS ARE BEING DEVELOPED BY A. F. GOLDOVIN, I. L. TARNOVSKIY, A. A. POZDEYEV, V. L. KOLMOGOROV, AND OTHERS. IN 1954, A. A. ILYUSHIN FORMULATED THE PRINCIPLES OF THE ENGINEERING THEORY OF SPATIAL FLOW OF METALS ON SURFACES. SOVIET SCIENTISTS (A. M. ZAYKOV, A. P. DINNIK, M. YA. BROVMAN, A. V. TRET'YAKOV, A. D. SOKOLOV, AND OTHERS) ALSO STUDIED THE DEFORMATION RESISTANCE OF STEELS AND ALLOYS. EXTENSIVE USE OF HIGH SPEED CONTINUOUS ROLLING MILLS REQUIRED THE FORMULATION OF A CONTEMPORARY THEORY OF CONTINUOUS ROLLING (V. N. VYDRIN, YU. M. FAYNBERG, AND OTHERS), AND A THEORY OF PRECISE ROLLING OF PLATES, SHEETS AND STRUCTURAL SHAPES (A. P. CHEKMAREV, I. M. MEYEROVICH, M. YA. BROVMAN, AND OTHERS). SOVIET SCIENTISTS CONTRIBUTE SIGNIFICANTLY TO THE FORMULATION OF THE THEORY OF PIPE MANUFACTURING PROCESSES (P. T. YEMEL'YANENKO, YU. M. MATVEYEV, P. K. TETERIN, A. I. TSELIKOV, I. A. FORMICHEV, YA. L. VATKIN, AND OTHERS).

UNCLASSIFIED

3/3, 031

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0119814

ABSTRACT/EXTRACT--CREATION OF THE THEORY OF LATERAL AND DIAGONAL PERIODICAL ROLLING FACILITATED THE INTRODUCTION OF NEW PROCESSES IN THE MANUFACTURE OF HIGH STRENGTH MACHINE PARTS. SOVIET SCIENTISTS HAVE TAKEN A LEADING PLACE IN THEORETICAL, EXPERIMENTAL, AND TECHNOLOGICAL STUDIES OF THE PLASTIC WORKING OF METALS.

UNCLASSIFIED

Forming

USSR

SMIRNOV, V. S., and GRIGOR'YEV, A. K.

"Theory of Pressure Working of Metals and Development of New Technological Processes in the USSR"

Moscow, IVUZ Chernaya Metallurgiya, No 4, 1970, pp 22-25

Abstract: A description is given of the theory of pressure working of metals and the history of the development of new metallurgical processes in the USSR. High velocities, ultrasonic oscillations, superhigh pressures, electromagnetic field energy, hydraulic shock and thermomechanical processing are some of the techniques being used in the USSR. Significant results have been achieved in various aspects of the theory of the pressure working of metals at the Leningrad Polytechnic Institute.

USSR

UDC 621.375.9:535

ZHELNOV, B. L., SMIRNOB, V. S., FADEYEV, A. P.

"Instability of Unidirectional Radiation in a Ring Laser"

Leningrad, Optika i Spektroskopiya, Vol 28, No 4, April 1970,
pp 744-746

Abstract: This article contains a study of the problem of interaction of counter waves in a ring laser. It is demonstrated that in the case of both homogeneous and inhomogeneous types of broadening of the amplification circuit there is always a generation energy range which depends on the difference of the generation frequency and the atomic transition frequency inside which the conditions of unidirectional radiation are unstable with respect to excitation of a counter wave. In the solution of the problems the field inside the resonator is found in the form of traveling waves with amplitudes which slowly vary with time. Both a gas laser and a solid state laser are considered. Explanations are given for the dependence of Γ on the radiation energy, where Γ defines the increment in the weak field ($E \sim \exp \Gamma t$). In the analysis of the solid state laser it is pointed out

1/2

- 123 -

USSR

ZHELNOV, B. L., et al, Optika i Spektroskopiya, Vol 28, No 4,
April 1970, pp 744-746

that $\text{Im } \Gamma$ gives a perturbation frequency shift analogous to the effect of a collision in a gas. In addition, $\text{Im } \Gamma/k$ defines the phase rate of the current amplifying the field and caused by spatial modulation of the overpopulation.

2/2

1/2 052 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--POLARIZATION OF THE RADIATION FROM A GAS LASER -U-
AUTHOR-(02)-SMIRNOV, V.S., TUMAYKIN, A.M.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 6, PP 2023-2030
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--GAS LASER, PHOTON, ANISOTROPY, DEPOLARIZATION, LASER RADIATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/2227 STEP NO--UR/0056/70/058/006/2023/2030
CIRC ACCESSION NO--AP0125805

UNCLASSIFIED

2/2 052

CIRC ACCESSION NO--AP0125805

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPRESSION OF THE
DEPOLARIZATION COEFFICIENT FOR THE RADIATION FROM A GAS LASER IS
OBTAINED AS A FUNCTION OF RADIATION ENERGY, CAVITY ANISOTROPY AND TYPE
OF OPERATING TRANSITION. WHEN A CIRCULAR POLARIZATION REGIME IS
CLASSICALLY STABLE, THE DEPOLARIZATION COEFFICIENT MAY BE OF THE ORDER
OF UNITY; IN THIS CASE HOWEVER THE COHERENCE TIME IS EXPONENTIALLY
LARGE. IF THE STEADY STATE WITH LINEAR POLARIZATION IS CLASSICALLY
STABLE, THE DEGREE OF POLARIZATION VARIES BETWEEN 1 AND 1-MEAN VALUE OF
N (MEAN VALUE OF N IS THE MEAN NUMBER OF PHOTONS) DEPENDING ON THE
ANISOTROPY OF THE CAVITY. FACILITY: INSTITUT FIZIKI
POLUPROVODNIKOV SIBIRSK. OTD. AN SSSR.

UNCLASSIFIED

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203110006-6

042
UNCLASSIFIED
TITLE--INSTABILITY OF UNIDIRECTIONAL EMISSION OF A RING LASER -U-
AUTHOR--(03)-ZHELNOV, B.L., SMIRNOV, V.S., FADEYEV, A.P.
COUNTRY OF INFO--USSR
SOURCE--SPEKTROSKOPIIA, VOL. 28, APR. 1970, P. 744-746
DATE PUBLISHED----APR70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--LASER RADIATION SPECTRUM, LASER STABILITY, MULTIMODE LASER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1199
CIRC ACCESSION NO--AP0124853
STEP NO--UR/0051/70/023/000/0744/0746
UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203110006-6"

2/2 042

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124853

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ANALYSIS OF THE INTERACTION OF
OPPOSING MODES IN A RING LASER. IT IS SHOWN THAT FOR BOTH HOMOGENEOUS
AND INHOMOGENEOUS LINE BROADENING, THERE ALWAYS EXISTS AN EMISSION
ENERGY RANGE (WHICH DEPENDS ON THE MISMATCH BETWEEN THE LASING FREQUENCY
AND THE ATOMIC TRANSITION FREQUENCY) IN WHICH THE UNIDIRECTIONAL
EMISSION MODE IS UNSTABLE WITH RESPECT TO THE EXCITATION OF THE OPPOSING
MODE.

UNCLASSIFIED

1/2 021
UNCLASSIFIED
TITLE--STRESSES IN THE OUTER PARTS OF A THIN METAL STRIP IN ROLLING -U-
PROCESSING DATE--04DEC70
AUTHOR--(02)--SMIRNOV, V.S., DURNEV, V.D.
COUNTRY OF INFO--USSR
SOURCE--IZVEST. AKAD. NAUK SSSR, METALLY, MAR.-APR. 1970, (2), 166-170.
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS
TOPIC TAGS--METAL ROLLING, IRON ALLOY, SILICON ALLOY, PLASTIC DEFORMATION,
STRESS, METAL STRIP
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/1441
STEP NO--UR/0370/70/000/002/0166/0170
CIRC ACCESSION NO--AP0130374
UNCLASSIFIED

2/2 021

CIRC ACCESSION NO--AP0130374
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. THE STRESS DISTRIBUTION IN A METAL STRIP DURING THE ACTUAL PROCESS OF ROLLING IS DISCUSSED THEORETICALLY WITH SPECIAL REF. TO THE STRESSES IN THE OUTER PARTS OF THE STRIP. AN ANALYTICAL RELATIONSHIP WAS DERIVED FOR DETERMINING THE COMPONENTS OF THE STRESS TENSOR IN THE REGION ADJACENT TO THE CENTRE OF DEFORMATION. DURING ROLLING, PLASTIC DEFORMATION STARTS BEFORE THE METAL ACTUALLY ENTERS THE ROLL GAP. THIS IS ILLUSTRATED BY REF. TO AN FE,SI ALLOY IN WHICH THE DISLOCATION DENSITY IN THE ZONE IMMEDIATELY PRECEDING THE CENTRE OF DEFORMATION RISES BY A FACTOR OF 10-50.

UNCLASSIFIED

USSR

UDC: 621.924.3

~~SMIRNOV, V.S., DANILEVSKIY, O.F., ALEKSANDROV, A.A., KAGAN, E.S., STOL'NIY, V.I.,~~
~~and ZOR'KIN, YE.F.~~

"Stamping of Thick Two-Layer Steel-Titanium Sheets"

Moscow, Kuznechno-Shtampovoychnoye Proizvodstvo, No 1, Jan70, pp 18-19

Abstract: The Izhorskiy Plant imeni A.A. Zhdanov produces elliptical bottoms with 900-, 1000-, and 1600-mm diameters by the hot stamping of VMSt3sp - VII-0 sheets 20 mm thick. The bimetallic steel-titanium sheets were obtained by vacuum pack rolling. In the hot stamping of bimetallic steel-titanium sheets, the correct selection of billet heating conditions is very important. Repeated heating of the steel-titanium bimetal, generally leads to a growth of the transition diffusion zone between the layers and increases its hardness, thus leading to lower bimetal quality. In heating the bimetallic billets, no material titanium gas saturation should be permitted, owing to the difficulty of removing the gas-saturated layer. If the billet heating temperature before stamping does not exceed 900°C, no noticeable growth of the transition diffusion zone between the layers occurs, and at the same time, the metal possesses adequate plasticity. Good surface quality is obtained in the stamped products. The technique, conditions, and equipment used in hot stamping of the bottoms are described. Investigations of specimens cut from various sections of the bottoms showed that heating and stamping under the conditions given do not worsen the bimetal properties. An increase in the thickness of the

1/2

USSR

SMIRNOV, V.S., et al, Kuznechno-Shtampovoye Proizvodstvo, No 1, Jan 70, pp 18-19

transition zone was not observed. The hardness of the transition zone did not change. Metallographic sections established that the thickness of the titanium gas-saturated layer did not exceed 0.05 mm. To obtain high-quality welded seams, it is first necessary to clean the titanium surface with an abrasive disk.

2/2

USSR

(12)

BORISOV, A. A., et al., Priory i Tekhnika Eksperimenta, No 3, May/Jun 73,
pp 49-53

obtained results are immediately printed out in the form of tables and graphs, and also appear on the oscillograph screen. Monitoring equipment has been developed, which keeps track of proper operation of the hodoscopes. The first results have been obtained on the scattering of π^- -mesons on nuclei at a pulse of 50 gigaelectron volts/sec and of protons within the initial-pulse range of 30-60 gigaelectron volts/sec. 3 figures. 2 tables. 3 references.

2/2

- 153 -

USSR

UDC 621.039.51

YUROVA, L. N., ROMODANOV, V. L., SMIRNOV, V. YE., PANKRATENKO, D. A., and SHISHKOV, L. K.

"Application of the Method of the Pulsed Neutron Source to Systems With Heterogeneities"

Fiz. Yadern. Reaktorov (Nuclear Reactor Physics -- Collection of works), No 2, Moscow, Atomizdat Press 1970, pp 3-10 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971, Abstract No 3.50.76)

Translation: Neutron physics problems are frequently solved by applying the theory of perturbations -- to calculate the change in criticality of nuclear reactors or various neutron flux functionals. The possibility is studied of using the theory of perturbations for calculation of reactor shielding. The theory of perturbations (generally speaking of high orders) can also be applied to the unstable equation of neutron transfer. In the experiments described with pulsed neutron source, a change in decay constants was achieved by two means: by changing the geometric size of the specimen or by changing its diffusion characteristic.

1/2

- 55 -

USSR

YUROVA, L. N., et al., Fiz. Yadern. Reaktorov, No 2, Moscow, Atomizdat Press 1970, pp 3-10 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971, Abstract No 3.50.76)

teristics (introduction of absorbers or scattering agents in homogeneous or discrete form, etc.). In the experiment discussed, the additional possibility is demonstrated of changing the decay constant by changing the position of heterogeneities in the moderator with constant volume ratio. This provides a method for studying the diffusion characteristics of heterogeneous systems or systems with local heterogeneities, since a new experimental dependence appears and, consequently, it can be compared with various calculation methods. 8 figures, 7 biblio. refs.

2/2

USSR

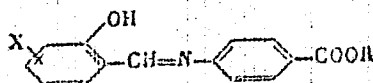
UDC: 547.574 - 576

SMIRNOV, YE. A., AGRACHEVA, YE. B., and GACHKOVSKIY, V. F., Moscow Textile Institute, Moscow, Ministry of Higher and Secondary Specialized Education RSFSR, and Institute of Chemical Physics, Moscow, Academy of Sciences USSR

"Structure and Luminescence of Salicylidene-p-aminobenzoic Acid Esters With Additional Electron-Donor Group in Aldehyde Component"

Leningrad, Zhurnal Obschey Khimii, Vol 40, No 2, Feb 70, pp 375-379

Abstract: The authors undertook to ascertain how luminescence intensity is affected by the introduction of typical electron-donor groups (H, OCH₃) into the nucleus of the aldehyde component of salicylidene-p-aminobenzoic acid esters. Four series of compounds were synthesized for this purpose, corresponding to the general formula



1/2

USSR

SMIRNOV, YE. A., et al., Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, pp 375-379

Series A: X = 4-OH; series B: X = 5-OH; series C: X = 4-OCH₃; series D: X = 5-OCH₃. R = alkyls of normal structure from C₁ to C₈ inclusive.

It was found that introduction of an additional electron-donor group into position 4 or 5 of the aldehyde component results in a sharp decrease in luminescence intensity. It is suggested that the principal reason for this is the transformation of the quasiquinoid structure characteristic of most esters of salicylidene-p-aminobenzoic acid into a benzenoid structure.

2/2

1/2 026 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--COMPOUNDS WITH TWO ELECTRON DONOR SYSTEMS. X. CHROMATICITY
PHENOMENA IN DERIVATIVES OF N-PHENYLGLYCYL, G,
AUTHOR--(02)--SHIRNOV, YE.A., MALYGINA, A.V.
COUNTRY OF INFO--USSR
SOURCE--Zh. Org. Khim. 1970, 6(3), 587-90
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--ELECTRON DONOR, COLOR, NAPHTHALENE, CRYSTAL, ORGANIC NITRO
COMPOUND, AMINE, NAPHTHOL, CONJUGATE BOND SYSTEM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1382 STEP NO--UR/0366/70/006/003/0587/0590
CIRC ACCESSION NO--AP0128782
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128782

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COLOR OF 1,5, (RC SUB6 H SUB4 NHCH SUB2 CONH)C SUB10 H SUB6 O SUB2 CC SUB6 H SUB4 NO SUB2,4 (I) (R EQUALS H, O, ME, P, ME, M, ME, O, MEQ, M, MEQ, P, MEQ) IS DUE TO THE PRESENCE OF 1 ELECTRON ACCEPTOR AND 2 ELECTRON DONATING GROUPS IN EACH MOL., WHICH INTERACT. THE PRESENCE OF THE NAPHTHALENE RING INTENSIFIES THE COLOR DUE TO THE CLOSER PACKING OF 1 CRYSTALS IN COMPARISON WITH SIMILAR SYSTEMS CONTG. ONLY CONJUGATED BENZENE RINGS. FACILITY: MOSK. TEKST. INST., MOSCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--STRUCTURE AND LUMINESCENCE OF P, (SALICYLIDENEAMINO) BENZOIC ACID
ESTERS WITH AN ADDITIONAL ELECTRON DONOR GROUP IN THE ALDEHYDE COMPONENT
AUTHOR--(03)--SMIRNOV, YE.A., AGRACHEVA, YE.B., GACHKOVSKIY, V.F.
COUNTRY OF INFO--USSR S
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 375-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--MOLECULAR STRUCTURE, LUMINESCENCE, SALICYCLIC ACID, BENZOIC
ACID, BENZENE DERIVATIVE, AMINE DERIVATIVE, ESTER, AZO COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1961 STEP NO--UR/0079/70/040/002/0375/0379
CIRC ACCESSION NO--AP0112927
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0112927

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTRODUCTION OF HO OR MEQ AS ELECTRON DONOR GROUPS INTO THE 4 OR 5 POSITIONS OF THE ALDEHYDE PART OF P,(SALICYLIDENEAMINO)BENZOICACID LOWERS THE INTENSITY OF LUMINESCENCE GREATLY, OWING TO THE CHANGE OF QUASIQUNOID STRUCTURE OF MOST ESTERS OF THIS ACID INTO THE BENZENOID STRUCTURE CAUSED BY SUCH A GROUP. THE LUMINESCENCE CHARACTERISTICS WERE TABULATED FOR THE AZOMETHINES WHICH WERE PREPD. BY 2 HR HEATING EQUIMOLAR AMTS. ALDEHYDES AND P,AMINOBENZOIC ACID ESTERS IN ETOH OR PROH. THE FOLLOWING 1 WERE REPORTED (SHOWN ON MICROFICHE). FACILITY: MOSK. TEKST. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.396.6-181.48

SAZONOV, A. A. and SMIRNOV, E. A.

"Some Problems Associated With the Construction of Automatic Systems for Orienting Integrated Circuits"

Sb. Nauch. tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn. (Collected Scientific Works on Problems of Microelectronics. Moscow Institute of Electronics Technology), 1972, vyp.10, pp 149-156 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 V252)

Translation: The potentialities of TV-pickups are studied with respect to the construction of automatic, integrated circuit, orienting systems. The advantages of TV-pickups as opposed to photoelectric pickups are shown with respect to the degree of light contrast reproduction, high-speed activity, resolution, degree of automation and reliability. Resums.

1/1

- 98 -

Acc. Nr.: AM0044312

Ref. Code: UR0000

Brozgul', L. I.; Smirnov, Ye. L.

Vibration Gyroscopes (Vibratsionnyye giroskopy) Moscow, Mashinostroyeniye, 1970, 213 pp (SL:1941)

TABLE OF CONTENTS:

Preface		3
Chapter I	General Data on Vibration Gyroscopes	5
II	Rotor Vibration Gyroscopes With Elastic Coupling	14
III	Rotor Vibration Gyroscopes With Combined and Pseudoelastic Coupling	40
IV	Use of Rotor Vibration Gyroscopes	77
V	Vibration Gyroscopes With a Rotor Drive	108
VI	Oscillatory Vibration Gyroscopes	162
Bibliography		213

1/2

4

Reel/Frame

40770878

AM0044312

The book deals with theoretical principles of vibration gyroscopes...
It was written for engineers and scientists working on designs and investigation of gyroscopic devices and navigation systems. It can be useful also to college professors and senior students.

7/2

68

19770879

USSR

UDC 534.612

SMIRNOV, YE. M., KHEYFETS, YE. I., and SHENDEROV, YE. L.

"Quantitative Analysis of Sound Fields, With the Use of a Shadow Visualization Technique"

Moscow, Akusticheskiy Zhurnal, Vol 19, No 2, Mar-Apr 73, pp 240-250

Abstract: A method is described for measuring the pressure distribution in sound fields, with the use of a shadow visualization technique. A measurement technique is proposed, which takes into account the nonlinear relationship between the pressure in the sound field and the illuminance of its image, as well as the nonlinearity of the characteristic curve of the photographic film. The measurement errors are evaluated. Photographs of sound fields scattered on elastic plates and shells are presented. Distributions of sound pressure in the scattered fields are measured. It is shown that the potentialities of a shadow realization technique are substantially expanded by the use of quantitative analysis. The proposed technique is sufficiently exact for conducting sound-scattering research on models. 12 figures, 2 tables, 12 references.

1/1

USSR

UDC 8.74

SERDYUK, G. I., SMIRNOV, YE. N.

"DZhOSS Systems Program in AIST-O"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 217-227 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V487)

Translation: The structure and operating principles of the DZhOSS systems program in the system for collective execution of AIST-O is described. The input language of the DZhOSS systems program is compiled on the basis of the JOSS language developed by the Rand Corporation and it is a Russian version of this language. The operation in the DZhOSS language takes place in the dialog mode. The DZhOSS instructions can be direct and indirect. The directly given instruction is executed immediately after it is given by the subscriber; after this execution all the information about it in the DZhOSS language is destroyed. The instructions given directly are not executed immediately. They are arranged by DZhOSS with respect to the values of the numerical tags and they constitute the subscriber program the execution of which the subscriber can initiate by special instructions in the language. If the subscriber desires to construct a large-volume program he can use the capabilities of the language which permit languages

1/3

USSR

SERDYUK, G. I., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 217-227

to be written from individual modules accumulated in the personal archives of the subscriber. The subscriber can then organize the calling sequence and the execution of these modules. The number of direct instructions which can be given by the subscriber during a communications session with the DZhOSS is unlimited. The reaction time of the DZhOSS to a single direct command is 3-7 seconds (depending on the type of instruction and on the number of subscribers operating at a given point in time with the system). The systems program is written in the EPSILON language and its length is about 12,000 M-220 instructions. The entire systems program is divided functionally into two parts: the master program and the execution program. The master program is run by the dispatcher on appearance of the corresponding requests from the terminals. If the given subscriber is the first subscriber connected to the DZhOSS, the master program dispatches a request to the dispatcher for resources, that is, for a number of units of the high speed external memory (magnetic drums, discs) for allocation of the execution program, and it copies the program from the standard tape reserves into the ordered reserves. Then the individual process is created for the given subscriber; the individual process memory is loaded with the initiating program, the subscriber boxes are transmitted to the individual process, and the latter is started. If the subscriber is not the first one, the execution

2/3

USSR

SERDYUK, G. I., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 217-227

program is already in the high speed external memory. In this case, the work is done with respect to creating the individual process, loading it and starting it. The execution program is divided into three parts: the master section, the decomposition program and the interpretation program. The master section reads the subscriber's instructions from the box and performs the initial editing of them (removes the deleted symbols and the register symbols). The decomposition program recognizes the instruction and forms the corresponding unit in the internal language. The interpreting program organizes the execution of the subscriber's program and interprets the structural elements of the internal language. An example of utilizing the DZhOSS systems program in AIST-0 is presented. The CONSUL-254 (Czechoslovakia) electric typewriters were used as the terminals. The subscriber input to the system, its relation to the DZhOSS systems program and an example of the dialog in the DZhOSS language are demonstrated. The bibliography has 8 entries.

3/3

USSR

UDC 621.385.632

LOSHAKOV, L.N., SMIRNOV, YE. N.

"Measurement Of Reflections From The Internal Absorber Of A TWT"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 11, pp 153-155 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A187)

Translation: A new method is described for inspection of the quality of matching of the internal absorber of a traveling-wave tube, based on the use of an auxiliary mobile absorber which, in contrast to the known method with a mobile dielectric, can be used with smaller lengths of the sections between reflecting discontinuities. Summary.

1/1

USSR

UDC 539.184

REBANE, T. K., and SMIRNOV, Ye. P

"The Application of a Modified Adiabatic Approximation to a Helium Atom"

Leningrad, Optika i Spektroskopiya, Vol 34, No 6, June 73, pp 1037 - 1042

Abstract: In Volume 31, page 350 of this Journal, Rebane suggested a modified adiabatic approximation (MAP) differing from the ordinary adiabatic approximation in that the equation for the rapid subsystem contains a coefficient of adiabaticity $\alpha(Q)$, which can be varied freely. The free choice of this function permits regulation of the degree in which the rapid subsystem adiabatically tracks the instantaneous configuration of the slow subsystem, leading to an improvement in the calculation of the mathematical expectation of total system energy. If α is assumed identical to 1, the MAP is identical to the ordinary adiabatic approximation. The optimal value of α is found to lie between 0 and 1.

Finding this optimal value is a key operation in the modified process. The method is based on the following considerations: If two arbitrary values are chosen for α and the modified adiabatic potentials calculated are found to be less for one than for the other over all values of Q , Courant's minimax theorem indicates that all eigenvalues of the equation for the wave function of the slow subsystem for which the modified adiabatic potential is lower will be lower than the corresponding eigenvalues calculated using the other value of α . The search

1/2